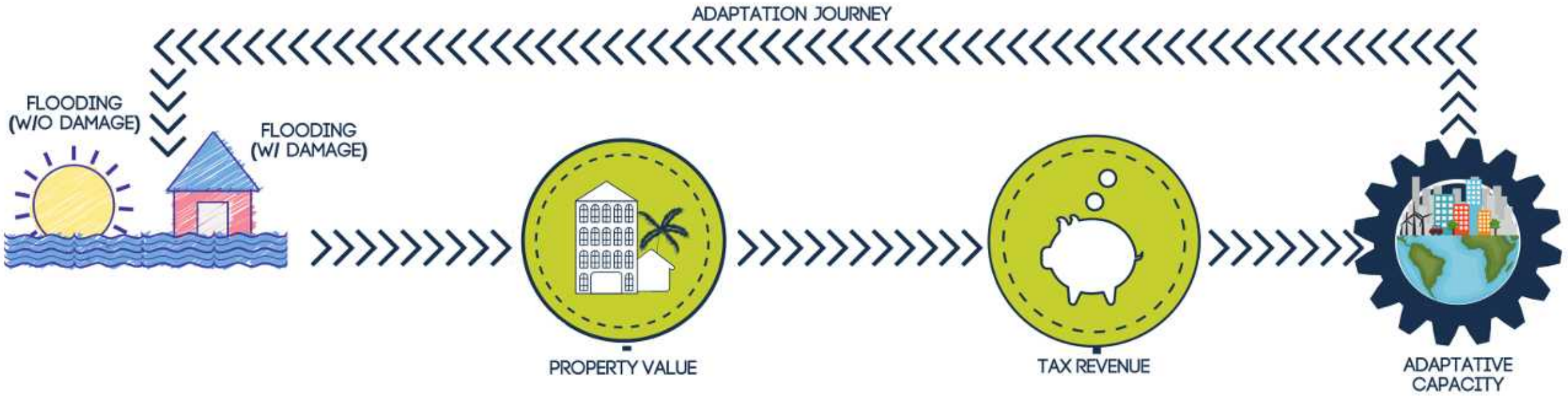
Alec Bogdanoff, Ph.D.
alec@brizaga.com

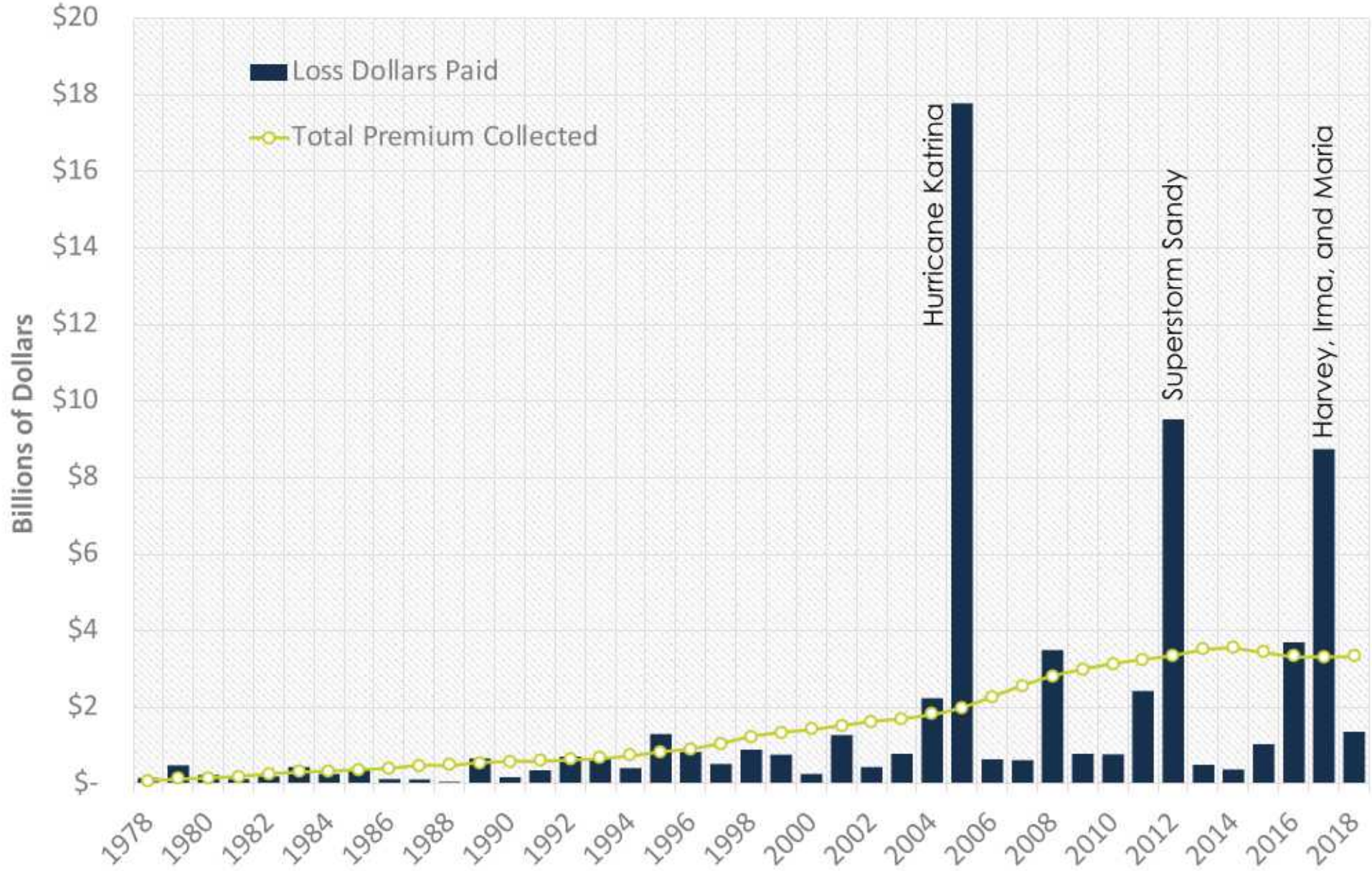
Building the Business Case for Adaptation

BRIZAGA
ASSESS. COMMUNICATE. ADAPT.


ADAPTATION JOURNEY
FLOODING
(W/O DAMAGE)
FLOODING
(W/ DAMAGE)
PROPERTY VALUE
TAX REVENUE
ADAPTATIVE
CAPACITY

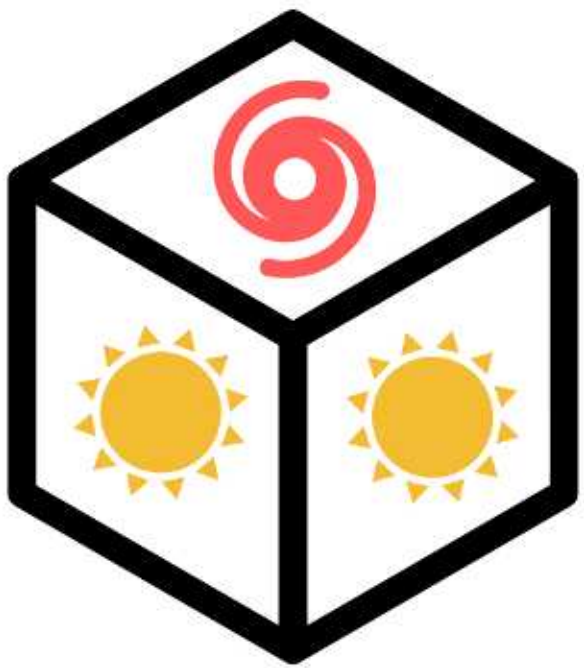
Flood Insurance is a strong driver of housing affordability.

National Flood Insurance Program (NFIP) through Federal Emergency Management Agency (FEMA) is the primary flood insurer in the United States.



Let's talk about **Annual Expected Loss** for a moment.

Let's say a hurricane is expected to hit Florida every 6th year. So, you have **1/6 chance** of being hit by a hurricane, any given year.



A hurricane will cause $300,000 in damage to your home.

Your **Annual Expected Loss** is $50,000.

If we can **reduce expected losses** through resilient actions, we can make a **positive business case**.

(*property value matters too)*

Community-wide Adaptation

A combination of soft and hard engineering investments at the open coast, intracoastal, and inland areas.

Building-level Adaptation

A combination of structural improvements to property itself.

Note: Building-level adaptation will not provide benefit to regional infrastructure or to coastal resources such as beaches.

Building-Level Adaptation

	CUMULATIVE IMPACTS AVOIDED	CUMULATIVE ADAPTATION COSTS	NET IMPACTS	BENEFIT-COST RATIO
BROWARD	$4.5 billion	$1.5 billion	$3 billion	3.04
MIAMI-DADE	$9.2 billion	$1.8 billion	$7.5 billion	5.18
MONROE	$459 million	$598 million	-$139 million	0.77
PALM BEACH	$3.3 billion	$545 million	$2.8 billion	6.08

FOR THE REGION

Benefits **$17.6BIL** ÷ Costs **$4.4BIL** = Benefit-Cost Ratio **3.97**

Job Years Supported **56,000**

One Job x *Ten Years* = *Ten Job Years* **10**

*Results presented in net present value terms using a 5 percent discount rate over the period of analysis from 2020 to 2070

**Presented in terms of job years. Job years is equivalent to one year of work for one person; for example, a new construction job that lasts two years will equate to two job years. Estimated job years supported due to direct investment spending in the four counties of analysis

Your neighbors in Miami Beach explored the business case for homeowners adapting.

3.6%

increase in home value per foot of elevation for single-family homes in Miami Beach

Additional Considerations:

- Permeability & Lot Coverage
- Building Elevation (Freeboard)
- Neighbor's improvements & home value

Methods of Resilience

Avoid

Create Redundancy

Protect or Isolate

Regenerate (Natural Systems)

Flexibility

Adapt

Small Actions, Big Results.

Build a Saltwater Bioswale to add a natural, low lying area to your property, designed to flood during high tides. The soil removed to build it can then be used to build up other areas of your property.

Build Elevated Driveway Edges to isolate water to the grassy parts of your property. Together with a properly graded driveway, this can ensure that the path from the car to the front door is always clear.

Elevate Critical Appliances like your HVAC system or water heater to ensure that flood waters won't cause them to fail. You could even raise them high enough to protect against bigger floods caused by storm surge from hurricanes.